

5147 787



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D6101-007
Job Sheet 188139



Part No: D6101-007

Job Qty: 24 pcs

Part Name: Saddle Billet



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 1/3/19

Job Tracking No:

Due Date: 1/25/19

Created By: Chantal Lavoie

Type: Stock

Description:

Note: DWG REV B

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier	Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier Lead Time	
100	Purchasing	24 pcs	1/25/19	1/25/19	0.00	0.00	Purchasing - 1	At 1/20/24
							Purchasing - 2	
							Purchasing - 3	
110	Packaging 2-1 - Receive - B4B	24 pcs	1/25/19	1/25/19	0.00	0.00	Packaging 2 - 1 - B4B	At 1/20/24
							Packaging 2 - 2 - B4B	
							Packaging 2 - 3 - B4B	
							Packaging 2 - 5 - B4B	
							Packaging 2 - 4 - B4B	
							Packaging 2 - 6 - B4B	
							Packaging 2 - 7 - B4B	
							Packaging 2 - 8 - B4B	
							Packaging 2 - 9 - B4B	
							Packaging 2 - 10 - B4B	
							Packaging 2 - 11 - B4B	
							Packaging 2 - 12 - B4B	
							Packaging 2 - 13 - B4B	
							Packaging 2 - 14 - B4B	
							Packaging 2 - 15 - B4B	
							Packaging 2 - 16 - B4B	
							Packaging 2 - 17 - B4B	
							Packaging 2 - 18 - B4B	
							Packaging 2 - 19 - B4B	
							Packaging 2 - 20 - B4B	
							Packaging 2 - 21 - B4B	
							Packaging 2 - 22 - B4B	
							Packaging 2 - 23 - B4B	
							Packaging 2 - 24 - B4B	
							Packaging 2 - 25 - B4B	
							Packaging 2 - 26 - B4B	
							Packaging 2 - 27 - B4B	
							Packaging 2 - 28 - B4B	

Plex 1/3/19 1:56 PM dart.lavoie.chanta

					Packaging 2 - 29 - B4B	
					Packaging 2 - 30 - B4B	
					Packaging 2 - 31 - B4B	
					Packaging 2 - 32 - B4B	
					Packaging 2 - 33 - B4B	
					Packaging 2 - 34 - B4B	
					Packaging 2 - 35 - B4B	
					Packaging 2 - 36 - B4B	
120	QC 6	24 pcs	1/25/19	0.00 0.00	QC 6 - 38	
					QC 6 - 42	
					QC 6 - 9	
					QC 6 - 68	DAS
					QC 6 - 61	61
130	Packaging 3-1 - Stock - B4B	24 pcs	1/25/19	0.00 0.00	Packaging 3 - 1 - B4B	9-89
					Packaging 3 - 2 - B4B	
					Packaging 3 - 3 - B4B	
					Packaging 3 - 4 - B4B	
					Packaging 3 - 5 - B4B	
					Packaging 3 - 6 - B4B	
					Packaging 3 - 7 - B4B	
					Packaging 3 - 8 - B4B	
					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	
					Packaging 3 - 12 - B4B	
					Packaging 3 - 13 - B4B	
					Packaging 3 - 14 - B4B	
					Packaging 3 - 15 - B4B	
					Packaging 3 - 16 - B4B	
					Packaging 3 - 17 - B4B	
					Packaging 3 - 18 - B4B	
					Packaging 3 - 19 - B4B	
					Packaging 3 - 20 - B4B	
					Packaging 3 - 21 - B4B	
					Packaging 3 - 22 - B4B	
					Packaging 3 - 23 - B4B	
					Packaging 3 - 24 - B4B	
					Packaging 3 - 25 - B4B	
					Packaging 3 - 26 - B4B	
					Packaging 3 - 27 - B4B	
					Packaging 3 - 28 - B4B	
					Packaging 3 - 29 - B4B	
					Packaging 3 - 30 - B4B	
					Packaging 3 - 31 - B4B	
					Packaging 3 - 32 - B4B	
					Packaging 3 - 33 - B4B	
					Packaging 3 - 34 - B4B	
					Packaging 3 - 35 - B4B	
					Packaging 3 - 36 - B4B	
140	QC 21 - SA	24 pcs	1/25/19	0.00 0.00	QC 21 - SA - 21	DAS
					QC 21 - SA - 70	21

Part Op 100 - Issue P/O: 42147 b) 7.750" x 8.250" x 2.50" thick d) Grain direction along 7.750" length

Descriptions: 110 - (Receive & Inspect for Damage & Mat'l Certs), Ensure material certification is attached

120 - (QC6- All purchased or subcontracted products), Ensure Material certification comply to Dwg D6101

130 - (Identify as per dwg & Stock Location: _____), LOCATION: MAT041

140 - (QC21- Final Inspection - Work Order Release)

x24

JAN 03 2019

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D6101-007P	7075-T7351 8.25X7.75X2.5	24 pcs (1 ea)	100-Purchasing	5147783

Job Allocations

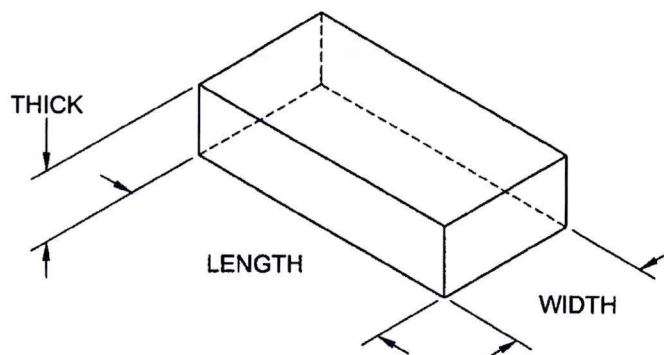
Operation	Component Part	Required	Inventory	Allocated
100-Purchasing	D6101-007P	24	0	0

Part Specifications

Specifications could not be found.

Plex 1/3/19 1:56 PM dart.lavoie.chantal

SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

RELEASED
09/07/15/WB

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

INTERORG TRANSFER.
PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3801198

Ship From: A. M. CASTLE & CO. 4175 ROYAL DRIVE SUITE 600 KENNESAW, GA 30144 USA		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped	F.O.B.	Freight Terms		Carrier		BOL No	
15-JAN-19	ORIGIN	Prepaid		ARCBEST		3801198-2	

Shipment Details	Final Destination Branch - TOR
-------------------------	---------------------------------------

Order No	Line No	Item No	Description	
5361670	2	752241.MO	2.5000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT RECTANGLE TO 8.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) X 7.75 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12	
Purchase Order No		Part Number	Ordered Qty	Invoice Qty
42147		YOUR ITEM NUMBER: D6101-007	24.00 PCS	24.00 PCS

Details	ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS
----------------	--

Delivery No.	Mill/Source	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
122508192	KAISER ALUMINUM			4	8.25"	7.75"	66.1267
122508192	CONSTELLIUM ROLLED PRODUCTS			10	8.25"	7.75"	165.3169

INTERORG TRANSFER
PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 2 of 2

122508192	KAISER ALUMINUM			10	8.25"	7.75"	165.3169
-----------	--------------------	---	--	----	-------	-------	----------

These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. Government or as otherwise authorized by U.S. law and regulations.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Date:

Name:

SHIP TO:

A M CASTLE METALS
4175 ROYAL DRIVE, SUITE 600
KENNESAW, GA 30144

SOLD TO:

AM CASTLE & CO- SOLD TO
1420 KENSINGTON RD
SUITE 220
OAK BROOK, IL 60523

KAISER ALUMINUM

Trentwood Works

PO Box 15108, Spokane Valley WA 99215-5108

15000 E Euclid, Spokane Valley WA 99216

Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number

4536971

CUSTOMER PO NUMBER: 474791-1		WORK PACKAGE:	CUSTOMER PART NUMBER: 752241		SHIP RUN/LOAD: 104450/8	GOVT CONTRACT NUMBER:	
KAISER ORDER NO: 1266132-1		SHIP DATE: 12-NOV-2018	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: KaiserSelect Plate	
WEIGHT SHIPPED: 5438 LB (2466.66 KG)	QUANTITY: 3 PCS EST.	TRUCK B/L #: 2077213	GAUGE: 2.5000 IN (63.5000 MM)		DIAMETER/WIDTH: 48.500 IN (1231.9 MM)	LENGTH: 144.500 IN (3670.3 MM)	

MHU 2276405: LOT 689306A9: 2 pieces;

MHU 2276408: LOT 689306A9: 1 pieces;

Certified Specifications

AMS 4078/RevK
ASTM B 209/Rev14
BSS 7055/RevB
DPS 4.713/RevAK
GSS16100/RevG/Amd1
PS 21211/RevP

AMS-QQ-A-250/12/RevA
ASTM B 594/Rev13
CMMP Q25/RevV
EAC MS1011/RevE
MMS 159/RevT

AMS-STD-2154/RevC
BAC 5439/RevJ
CSTI 006/RevE
GAMPS 9101/RevB/AmdSCN1
PPS 20.04/Rev7

Test Code: 4297

Lot: 689306A9

Cast 711

Drop 11

Test Results

Ingot 4

Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.5 : 72.2 (493 : 498)	60.6 : 61.3 (418 : 423)	11.8 : 11.8

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	41.3 Min	41.4 Max
(MS/M) :	24.0 Min	24.0 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.08	0.19	1.4	0.03	2.4	0.19	5.8	0.03	0.01	0.01	TOT 0.03



CERTIFIED TEST REPORT

Trentwood Works

PO Box 15108, Spokane Valley WA 99215-5108

15000 E Euclid, Spokane Valley WA 99216

Phone: (800) 367-2586

Serial Number

4536971

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

ORDER COMMENTS

AMC CA-15413B R 9

TEST NOTES

Metal represented by this test report was 100% Type I (immersion) ultrasonically tested from one side with 3mm dead zones top and bottom and meets the Class A and Class B requirements of all specifications referenced on this test report. No surface marking of sonic indications is performed.

CERTIFICATION

Kaiser Aluminum, Trentwood Works, is ISO 9001, AS9100, and ISO 14001 certified, and hereby certifies that all material shipped under this order:

- * has been inspected, tested, and found to be in conformance with the requirements of the specifications indicated herein.
 - * All test equipment and measuring devices are calibrated and certified in accordance applicable specifications. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. Reported elongation values have been measured as elongation at fracture.
 - * was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content.
 - * has been thermally processed in compliance with AMS 2772, where applicable.
 - * is mercury free, within the limits of detection of ASTM E1215 (<1ppm).
 - * is in compliance with RoHS 2, European Union Directive 2011/65/EU.
 - * is in compliance with European Chemical Agency, ECHA, REACH regulations, (EC) No 1907/2006, and Kaiser regularly monitors these regulations for updates.
 - * is free of Conflict Minerals, as defined in Section 15.2 of the Dodd-Frank Act.
 - * is free of weld repair.
 - * meets the reporting requirements of EN10204, Type 3.1.
- Any warranty is limited to that shown on Kaiser Aluminum's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of the Kaiser Aluminum laboratory. The recording of false, fictitious or fraudulent statements or entries on this certificate may be punished as a felony under federal law.

Michael Peske, PT Lab Process Engineer

Constellium

Nadcap
Materials Testing Laboratory

Revised Certification

CERTIFIED TEST REPORT
Constellium Rolled Products
Ravenswood, LLC

A M CASTLE & COMPANY
4175 ROYAL DRIVE
KENNESAW GA
30144
US

S O L O T O

A M CASTLE
1420 KENSINGTON ROAD, SUITE 220
OAK BROOK IL
60523
US

A M CASTLE		110559343	4775	INCLUSION		Serial:20180516-0110559343	Pg 1 of 3																														
CUSTOMER PURCHASE ORDER NO. & ITEM 454316				Constellium ORDER NO. 233482																																	
ALLOY 6075	CLAD	TEMPER T3351	GAUGE 2.50000 in 63.50 mm	WIDTH 48.50000 in 1,232 mm	LENGTH 144.50000 in 3,670 mm	CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA																															
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH																																					
CUSTOMER SPECIFICATION AMS 4075J																																					
PART NUMBER 752241	B/L NUMBER 99745	DATE SHIPPED 05/16/2018																																			
WT. SHIPPED 5360.600 LB	NO. OF PIECES 000003	GOVT. CONTRACT NO.																																			
ALL LOTS ON THIS CERTIFICATION ALSO CONFORM TO THE FOLLOWING REQUIREMENTS: ASTM B594 REV 13 2013 100% SONIC W/ 0.12" DEADZONE CLASS A AMS QQ-A-22012 AMS STD-2163A 2012 TYPE1 CLASS A 100% SONIC MINUS DEADZONE ASTM B209-14 RSS-7050B 2013 CLASS A 100% SONIC TESTED MINUS DEADZONE CMMP-025 REV U CS T1006 REV E 2011 CLASS A 100% SONIC MINUS DEADZONE DPS 4 713 REV AK 2012 CLASS A 100% SONIC MINUS DEADZONE GAMP'S 9101 REV B 2006 CLASS A 100% SONIC MINUS DEADZONE MMS 1591 PS 21211P 2010 CLASS A 100% SONIC MINUS DEADZONE																																					
Load Details <table border="1"> <thead> <tr> <th>Package</th> <th>Net Lbs</th> <th>Kg</th> <th>Lot</th> <th>Place</th> <th>Serial</th> <th>Parent Lot</th> </tr> </thead> <tbody> <tr> <td>1001778511</td> <td>1,750,000</td> <td>811.930</td> <td>9422779</td> <td>03</td> <td></td> <td></td> </tr> <tr> <td>1001778514</td> <td>1,785,000</td> <td>809.652</td> <td>9418218</td> <td>01</td> <td></td> <td></td> </tr> <tr> <td>1001778514</td> <td>1,785,000</td> <td>809.652</td> <td>9418218</td> <td>02</td> <td></td> <td></td> </tr> </tbody> </table>								Package	Net Lbs	Kg	Lot	Place	Serial	Parent Lot	1001778511	1,750,000	811.930	9422779	03			1001778514	1,785,000	809.652	9418218	01			1001778514	1,785,000	809.652	9418218	02				
Package	Net Lbs	Kg	Lot	Place	Serial	Parent Lot																															
1001778511	1,750,000	811.930	9422779	03																																	
1001778514	1,785,000	809.652	9418218	01																																	
1001778514	1,785,000	809.652	9418218	02																																	
Lot: 9422779 (See test results below) Tensile - Room Temperature (US) <table border="1"> <thead> <tr> <th colspan="3">Ultimate (KSI)</th> <th colspan="3">Yield (KSI)</th> <th colspan="3">Elongation (%)</th> <th>Report</th> </tr> <tr> <th>Direction</th> <th>Tests</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>LT</td> <td>02</td> <td>71.5</td> <td>72.2</td> <td>60.6</td> <td>61.2</td> <td>11.5</td> <td>11.5</td> <td>11.5</td> <td>11.5</td> </tr> </tbody> </table>								Ultimate (KSI)			Yield (KSI)			Elongation (%)			Report	Direction	Tests	Min	Max	Min	Max	Min	Max	Min	Max	LT	02	71.5	72.2	60.6	61.2	11.5	11.5	11.5	11.5
Ultimate (KSI)			Yield (KSI)			Elongation (%)			Report																												
Direction	Tests	Min	Max	Min	Max	Min	Max	Min	Max																												
LT	02	71.5	72.2	60.6	61.2	11.5	11.5	11.5	11.5																												
Signature: <i>[Signature]</i> Dave Durburger - Laboratory Manager																																					



CERTIFIED TEST REPORT

Constellium Rolled Products
Ravenswood, LLC

Revised Certification

S
H
I
P
T
O

A M CASTLE & COMPANY
4175 ROYAL DRIVE
KENNESAW GA
30144
US

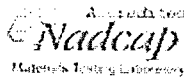
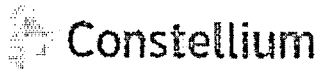
S
O
L
D
T
O

A M CASTLE

1470 KENSINGTON ROAD, SUITE 220
OAK BROOK IL
60523
US

A M CASTLE		110559343		4775		INCLUSION		Serial:20180516-0110559343		Pg 2 of 3	
CUSTOMER PURCHASE ORDER NO. & ITEM 454316						Constellium ORDER NO. 233482					
ALLOY 7075		CLAD		TEMPER / GAUGE T7351 2.50000 in 63.50 mm		WIDTH 46.50000 in 1,232 mm		LENGTH 144.50000 in 3,670 mm			
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH											
CUSTOMER SPECIFICATION AMS 4076J											
PART NUMBER 752241		B/L NUMBER 99745		DATE SHIPPED 05/16/2018							
WT. SHIPPED 5360.000 LB		NO. OF PIECES 000003		GOVT. CONTRACT NO.							
CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 899 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA											
Dave Dunbar - Laboratory Manager											
Tensile - Room Temperature (SI)											
Direction		Tests		Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)		Report	
LT		02		Min 493 Max 498		Min 418 Max 422		Min 11.5 Max 11.5			
Conductivity											
% IACS MIN 40.7 MAX 41.5 % MS/M MIN 23.6 MAX 24.1											
Chemistry (Actual)											
SI		FE		CU		Mn		CR		Zn	
0.07		0.15		1.46		0.04		2.60		0.21	
Ti		0.04		0.04		0.04		0.04		0.00	
OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER											
All material contained in this lot was cast and manufactured in the USA											
Lot: 9418218 (See test results below)											
Tensile - Room Temperature (US)											
Direction		Tests		Ultimate (KSI)		Yield (KSI)		Elongation (%)		Report	
LT		02		Min 74.2 Max 74.7		Min 63.6 Max 63.8		Min 12.0 Max 12.0			
P-850-4550 REVISED: 01 2018											

Revised Certification



CERTIFIED TEST REPORT Constellium Rolled Products Ravenswood, LLC

S
H
I
P

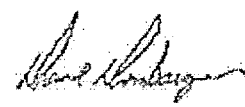
T
O

A M CASTLE & COMPANY
4175 ROYAL DRIVE
KENNESAW GA
30144
US

S
O
L
D

T
O

A M CASTLE
1420 KENSINGTON ROAD, SUITE 220
OAK BROOK IL
60523
US

A M CASTLE		110859343		4776		INCLUSION		Serial:20180516-0110859343		Pg 3of3																															
CUSTOMER PURCHASE ORDER NO. & ITEM 454316						Constellium ORDER NO. 233482			CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Dave Dunbarger - Laboratory Manager																																
ALLOY 7075	CLAD	TEMPER T7351	GAUGE 2.50000 in 63.50 mm	WIDTH 48.50000 in 1,232 mm	LENGTH 144.60000 in 3,670 mm																																				
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH																																									
CUSTOMER SPECIFICATION AMS 4078J																																									
PART NUMBER 752241		B/L NUMBER 99745		DATE SHIPPED 05/16/2018																																					
WT. SHIPPED 5360.000 LB		NO. OF PIECES 000003		GOVT. CONTRACT NO.																																					
Tensile - Room Temperature (SI) <table border="1"> <thead> <tr> <th colspan="2"></th> <th colspan="2">Ultimate (N/MM2)</th> <th colspan="2">Yield (N/MM2)</th> <th colspan="2">Elongation (%)</th> <th colspan="2">Report</th> </tr> <tr> <th>Direction</th> <th>Tests</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td>LT</td> <td>02</td> <td>512</td> <td>515</td> <td>439</td> <td>440</td> <td>12.0</td> <td>12.0</td> <td colspan="2"></td> </tr> </tbody> </table>														Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)		Report		Direction	Tests	Min	Max	Min	Max	Min	Max			LT	02	512	515	439	440	12.0	12.0		
		Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)		Report																																	
Direction	Tests	Min	Max	Min	Max	Min	Max																																		
LT	02	512	515	439	440	12.0	12.0																																		
Conductivity % IACS MIN 39.4 MAX 40.4 % MS/M MIN 22.9 MAX 23.4																																									
Chemistry (Actual) <table border="1"> <thead> <tr> <th></th> <th>SI</th> <th>FE</th> <th>CU</th> <th>MN</th> <th>MG</th> <th>CR</th> <th>ZN</th> <th>TI</th> <th>ZR</th> </tr> </thead> <tbody> <tr> <td>Core</td> <td>0.07</td> <td>0.13</td> <td>1.44</td> <td>0.02</td> <td>2.61</td> <td>0.20</td> <td>5.59</td> <td>0.03</td> <td>0.01</td> </tr> </tbody> </table>													SI	FE	CU	MN	MG	CR	ZN	TI	ZR	Core	0.07	0.13	1.44	0.02	2.61	0.20	5.59	0.03	0.01										
	SI	FE	CU	MN	MG	CR	ZN	TI	ZR																																
Core	0.07	0.13	1.44	0.02	2.61	0.20	5.59	0.03	0.01																																
OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER																																									
All material contained in this lot was cast and manufactured in the USA																																									
QUALITY TEXTS: AMC CA-15413B R 6		Revised Certification: Also conforms to AMS 4078K and CMMPO25 Rev V - customer request. "Revision certifies the material properties and condition as it originally left the mill, not as of date of revision".																																							
THIS TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY OR AUTHORIZED QUALITY DELGATE. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. CHEMISTRY BY QES: ARKSPARK CHEMISTRIES REPORTED IN PERCENTAGE BY WEIGHT WHEN FRACTURE TOUGHNESS TEST REQUIRED, TESTED PER ASTM E399 WHEN TENSILE TEST REQUIRED, TESTED PER ASTM E8; E557 DUNS Number: 080570149; CAGE Code: 1YWLG Mercury is not a normal contaminant in aluminum alloys and neither mercury nor any of its compounds were utilized in the manufacture of our product. "END OF CERTIFICATION"																																									
P-860-154D REVISED: 01 2018																																									

RAW QUALITY

05566-1

Pat M...
5/30/18

A M CASTLE METALS
4175 ROYAL DRIVE, SUITE 600
KENNESAW, GA 30144

KAISER ALUMINUM

SKYLINE POWER
TENTWOOD

PO Box 15108, Spokane Valley WA 99215-5108
15000 E Euclid, Spokane Valley WA 99216
Phone: (800) 367-2586

REPORTS

Serial Number
4537893

SOLD TO:

AM CASTLE & CO- SOLD TO
1420 KENSINGTON RD
SUITE 220
OAK BROOK, IL 60523

CUSTOMER PO NUMBER: 475165-1	WORK PACKAGE: 752241	CUSTOMER PART NUMBER: 104456/5	SHIP RUN/LOAD: 104456/5	GOV'T CONTRACT NUMBER:
Kaiser Order NO: 12681432-1	SHIP DATE: 18-NOV-2018	ALLOY: 7075	CLAD: BARE	FRABER: T7351
WEIGHT SHIPPED: 7196 LB (3284.08 KG)	QUANTITY: 4 PCS EST.	TRUCK B #: 2077370	GAUGE: 2.5000 IN (63.5000 MM)	DIAMETER/WIDTH: 48.500 IN (1231.9 MM)
				LENGTH: 144.500 IN (3679.3 MM)

MHU 2276439: LOT 28031388: 2 pieces;
 MHU 2276440: LOT 28031388: 2 pieces;

10
 9
 8
 7
 6
 5
 4
 3
 2
 1

AMS 4078/RevK
ASTM B 209/Rev14
BSS 7055/RevB
DPS 4.713/RevAK
GSS16100/RevG/Amd1
PS 21211/RevP

AMS-STD-2154/RevC
BAC 5439/RevJ
CSTI 006/RevE
GAMPS 9101/RevB/AmdSCN1
PPS 20.04/Rev7

Test Code: 4297

Lot: 280313B8 Cast #713

Drop 13

SECRET

Melted in USA

(ASTM E8/E857)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests
	T7351	LT / 2 (Min:Max)

Yield KSI (MPa)	Elongation %
57.6; 58.3	11.7; 11.8
(397; 402)	

(ASTM E1004)
(EN 2004-1)

Conductivity %ACS:
(MS/M):

(ASTM E1251)

[illegible]

KAISER ALUMINUM

CERTIFIED TEST REPORT

Trentwood Works

PO Box 15108, Spokane Valley WA 99215-5108
15000 E Euclid, Spokane Valley WA 99216
Phone: (800) 367-2586

Serial Number
4537893

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

ORDER COMMENTS

AMC CA-154138 R 9

TEST NOTES

Metal represented by this test report was 100% Type I (immersion) ultrasonically tested from one side with 3mm dead zones top and bottom and meets the Class A and Class B requirements of all specifications referenced on this test report. No surface marking of weld indications is performed.

CERTIFICATION

- Kaiser Aluminum, Trentwood Works, is ISO 9001, AS9100, and ISO 14001 certified, and hereby certifies that all material shipped under this order has been inspected, tested, and found to be in conformance with the requirements of the specifications indicated herein.
 - All test equipment and measuring devices are calibrated and certified in accordance with applicable specifications. For material thickness outside specification limits, mechanical properties as shown herein and chemical composition meet specification requirements. Reported elongation values have been measured as elongation at fracture.
 - Material was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content.
 - Material has been thermally processed in compliance with AMS 2772, where applicable.
 - Material is mercury free, within the limits of detection of ASTM E1215 (≤ 1ppm).
 - Material is in compliance with RoHS 2, European Union Directive 2011/65/EU.
 - Material is in compliance with European Chemical Agency, ECHA, REACH regulations, (EC) No 1907/2006, and Kaiser regularly monitors these regulations for updates.
 - Material is free of Conflict Minerals, as defined in Section 15.2 of the Dodd-Frank Act.
 - Material is free of weld repair.
 - Material meets the reporting requirements of EN16204, Type 3.1.
- Any warranty is limited to that shown on Kaiser Aluminum's standard General Terms and Conditions of Sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of the Kaiser Aluminum Laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under Federal Law.

Michael Peske

Michael Peske, PT Lab Process Engineer

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: D6101-607
 DATE: 19/01/24

PO / BATCH NO.: P0042147/S147787

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 24x
 QUANTITY INSPECTED: 24x
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 2.500"
 THICKNESS RECEIVED: 2.500"
 SHEET SIZE ORDERED: —
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<u>N</u>	
CORRECT FINISH	<u>Y</u>	N	
CORROSION	Y	<u>N</u>	
CORRECT GRAIN DIRECTION	<u>Y</u>	N	
CORRECT MATERIAL PER M-DRAWING	<u>Y</u>	N	<u>AMS-QQ-A-250/12</u>
CORRECT THICKNESS	<u>Y</u>	N	
PHOTO REQUIRED	Y	<u>N</u>	
CORRECT REF # TO LINK CERT	<u>Y</u>	N	<u>HT: 689306A9; 9418218; 28031338</u>
CORRECT MATERIAL IDENTIFICATION	<u>Y</u>	N	
CORRECT M# ON THE MATERIAL	<u>Y</u>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 61</u> DATE: <u>19/01/24</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in